where there was much vibration from passing trucks, trolleys, etc., yet owing to the peculiar arrangement of my outfit, I have had but very little trouble in this particular direction, even with very high-power work.

It will hardly be necessary for me to say anything in regard to the plates and developer I use, as each person has his pet plates and formulas, but in the work which I have to do, I have found that the Cramer isochromatic slow and the Cramer trichromatic plates, using glycin as a developer, have given the best results.

I trust that this rather erratic description of my photomicrographic outfit may be comprehensible.

THE PIETZSCH MICROTOME

By Edward P. Dolby

In undertaking to improve the rotary microtome was realized the necessity of making it as simple in construction as efficient, and as practical as possible, and we feel satisfied that there have been added many appreciable advantages to the excellent invention of Professor Minot.

First of all it was endeavored to construct a knife holder which would serve to operate both paraffin and colloidin preparations, thus doing away with the expense and inconvenience of an extra holder, while moreover affording the advantage to the operator of being able to read the angles of inclination, so that the most favorable angles for different kinds of work may be noted, and taken when doing again the same work.

Another important advantage of this microtome is that the active part of the knife may be restricted in order to obtain the greatest rigidity and to use the entire length of the edge before resharpening. It will be well to notice that the knife is clamped against a three-point plane, logically the only secure clamping device for a honed knife, which only by accident is a perfectly straight plane. Even a new knife is seldom of a perfect, straight plane, an old one never.

The object carrier is exceedingly rigid and simple, though it permits the adjustment of the object in every plane as well as the most complicated heretofore constructed, and has besides the advantage of being clamped by only one screw instead of two or three, and

also that of allowing a horizontal adjustment of the preparation in order to bring it close to one of the knife clamps.

The coarse adjustment is certainly one of the most convenient devices which has been lately invented for microtomes. It is a great time saver, effecting a rapid advance or retrograde movement of the object carriage in order to bring the preparation quickly, though exactly, near the knife when beginning, or to cut off worthless sections, etc., without releasing the automatic feed.

Moreover all gearing is reduced, both as to size and to number of parts, as much as possible and either so encased or so placed as to guard against danger to the operator and important mechanisms.

The automatic feed is entirely new, and the most accurate ever constructed, in which when working the shock on the feeding screw and its bearing is entirely avoided. It is provided with a worm, thus working with the greatest smoothness and accuracy up to the present time attained. It is an inclined plane gliding on another inclined plane,—the worm gear,—and therefore there is nearly no friction or wear—wear being proportioned to friction. It is the only device which by the use becomes more accurate, as the two inclined planes gliding always on each other become more and more smoothed by the wear. This feed is the only one which advances only when the object is clear off the knife. Finally, only the worm gives the advantage gained by cutting by hand of producing the finest sections of such different thicknesses as may be required.

NEW MODEL PROJECTION APPARATUS—BAUSCH AND LOMB LANTERN "D"

The value of the projection lantern for educational purposes is becoming daily more apparent and has resulted in a demand for a simple and inexpensive lantern for use in schools of all grades, for colleges, for lecture platforms, and for societies. This demand has been increasing rapidly and at last has been met.

The Bausch and Lomb Optical Company have just put upon the market a new model, which while it is simple and inexpensive, is at the same time efficient, portable, of scientific accuracy, and of pleasing design.

The most important characteristic of this lantern is its convertibility. The various parts are made interchangeable so that one lan-